



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 627 Main Street, Worcester MA 01608 • 508-792-7650

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October 4, 2011

Fitchburg State University
299 North Street
Fitchburg, MA 01420
Attn: David Petrucci, Chief Engineer

RE: Fitchburg
Transmittal No.: X233968
Application No.: CE-11-006
Class: SM80-7
FMF No.: 132045
AQ ID 118-0028
**RESTRICTED EMISSION STATUS -
APPROVAL**

Dear Mr. Petrucci:

The Massachusetts Department of Environmental Protection ("MassDEP") has determined that the above-referenced Restricted Emission Status Application ("RES") is administratively and technically complete. MassDEP hereby **approves** your RES Application legally limiting the amount of federal potential emissions from the combustion equipment at Fitchburg State University located at 299 North Street in Fitchburg, Massachusetts through a restriction on the fuels used and/or another restriction as noted herein. **This RES Approval supersedes RES Approval No. TR #121258, issued to you by MassDEP on December 12, 1996, in its entirety.**

This RES Approval will be issued in accordance with 310 CMR 7.02(9) of the Air Pollution Control Regulations ("Regulations"), 310 CMR 7.00 as adopted pursuant to M.G.L. c.111, Sections 142A – 142N.

Included as part of this RES Approval are the following:

- General Conditions for RES
- Attachment A of the application letter dated March 17, 2011
- Special Conditions: Emission limits and Operating limits

Notice of the proposal to approve the RES was published in the Fitchburg Sentinel & Enterprise on September 3, 2011 in accordance with the requirements of 310 CMR 7.02(9). The public comment period ended on October 3, 2011. One comment was received from MassDEP, that the application had used incorrect emission factors as follows:

1. For boilers burning #6 fuel oil, the application emission factor of 47 pounds NOx per 1000 gallons should have been 55 pounds per 1000 gallons.

2. For boilers burning #2 fuel oil, the application emission factor of 24 pounds NOx per 1000 gallons should have been 20 pounds per 1000 gallons.

In response to this comment, the NOx emissions have been recalculated with the correct emission factors. In order to achieve the same facility wide total NOx limit that was originally proposed, 48.24 tons per year, it is necessary to reduce the proposed total allowable fuel usage limits. MassDEP has accordingly changed the allowable total #6 fuel oil usage from 750,000 to 655,636 gallons per year. No other change has been made in this RES Approval.

Please review the entire RES Approval carefully as it stipulates the particular conditions the facility owner/operator must comply with for the facility to be operated in compliance with the Regulations.

MassDEP has determined that the filing of an Environmental Notification Form ("ENF") with the Secretary of Energy and Environmental Affairs, for air quality purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act and Regulation 310 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

Should you have any questions concerning this RES Approval, please contact Paul Dwiggins at (508) 767-2760.

Sincerely,

This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.

Roseanna E. Stanley
Acting Permit Chief,
Bureau of Waste Prevention

RES/PD

cc: Montachusett Regional Planning Commission, 1427R Water St., Fitchburg, MA 01420
Donald Dahl, Operating Permit Program, USEPA Region 1, 5 Post Office Square – Suite
100, Boston, MA 02109-3912
Dana Samuelson, DEP, CERO
Yi Tian, DEP, Boston

I. FACILITY DESCRIPTION

Fitchburg State University (“the Permittee”) has fuel utilization equipment in several different buildings across the campus. The largest are six(6) boilers designated as Boilers 1, 2 and 3-Dupont and Boilers 1, 2, and 3-McKay (SR DEP #: 20, 21 and 22). These boilers burn either #6 fuel oil (0.5% sulfur and 1% sulfur), #2 fuel oil, or natural gas. Other buildings have smaller boilers firing only natural gas. There are also several #2 fuel oil and ULSD fired emergency generators and fire pumps. The complete list of fuel utilization equipment, contained in Attachment A of the application letter dated March 17, 2011 from Woodard & Curran, is reproduced at the end of this Approval.

II. PROJECT DESCRIPTION

On December 14, 1973 the Massachusetts Department of Public Health issued Approval #CM-73-C-029 to the Permittee for three water-tube boilers rated at 40,000 pounds of steam per hour each.

MassDEP issued a Restricted Emission Status (RES) to the Permittee under Transmittal #88654 on January 5, 1995. MassDEP modified this RES on December 12, 1996 under Transmittal #121258; this modified RES included the replacement of one of the previous three boilers with a new boiler of smaller size. On July 14, 2004, MassDEP issued a letter revising the reporting requirement for the Permittee and containing the required annual report format. In 2011, the Permittee requested a modification to this RES to update the fuel burning limits and the list of fuel burning equipment.

The previously approved facility-wide NO_x limit of 36.26 tons per year will be increased to 48.24 tons per year and the previously approved facility-wide SO₂ limit of 94.76 tons per year will be decreased to 63.8 tons per year.

This RES Approval, CE-11-006, will supersede the previously issued RES Approvals.

Emission Unit Identification

The emission units contained in Table 1 are subject to and regulated by this RES Approval:

Table 1				
EMISSION UNIT (EU)	DESCRIPTION of EMISSION UNIT	EU DESIGN CAPACITY	Allowable Fuel¹	Current MassDEP SR #
1	Dupont - Unit 1; Cleaver Brooks, Model CB400-600-150	25.1 MMBtu/hr Maximum input rating	Primary: Natural Gas Secondary: # 6 Fuel Oil (0.5 % Sulfur)	1
2	Dupont – Unit 2; Cleaver Brooks, Model DL-52	49.515 MMBtu/hr Maximum input rating	Primary: # 6 Fuel Oil (0.5 % Sulfur) Secondary: # 6 Fuel Oil (1.0 % Sulfur)	2
3	Dupont – Unit 3; Cleaver Brooks, Model DL-52	49.515 MMBtu/hr Maximum input rating	Primary: # 6 Fuel Oil (0.5 % Sulfur) Secondary: # 6 Fuel Oil (1.0 % Sulfur)	3
4*	McKay – Unit 1; HB Smith, B28HE-S-16	4.923 MMBtu/hr Maximum input rating	Primary: Natural Gas Secondary: # 2 Fuel Oil (0.3 % Sulfur)	20
5*	McKay – Unit 2; HB Smith, B28HE-S-16	4.923 MMBtu/hr Maximum input rating	Primary: Natural Gas Secondary: # 2 Fuel Oil (0.3 % Sulfur)	21
6*	McKay – Unit 3; HB Smith, B28HE-S-16	4.923 MMBtu/hr Maximum input rating	Primary: Natural Gas Secondary: # 2 Fuel Oil (0.3 % Sulfur)	22
7*	Various generators, fire pumps, small boilers and heaters	See Appendix A for complete list	Natural Gas, #2 Fuel Oil (0.3% sulfur), and ULSD	11, 12, 13, 14, 15, 16, 17, 18, 19, 23, 24, 25,

Footnote 1: Percent sulfur by weight

Table 1 Key:

EU = Emission Unit

MMBtu/hr = Million British thermal units per hour

ULSD = Ultra Low Sulfur Diesel

*Each of these emission units was below permitting thresholds at the time of installation and so was not required to obtain approval under 310 CMR 7.02.

III. SPECIAL CONDITIONS FOR RESTRICTED EMISSION STATUS APPROVAL

A. Emission Limits, Short Term and Long Term

Pursuant to 310 CMR 7.02(9) and (10), the Permittee shall comply with the emission limits/restrictions as contained in Table 2, below:

Table 2		
EMISSION UNIT	POLLUTANT	EMISSION LIMIT
EU # 1, 2, 3, 4, 5, and 6	NO _x	Short term: 10.3 TPM Long term: 35.03 TPY
	SO ₂	Short term: 16.8 TPM Long term: 63.23 TPY
Facility-wide	NO _x	Short term: 15.58 TPM Long term: 48.24 TPY
	SO ₂	Short term: 17.03 TPM Long term: 63.8 TPY

Table 2 Key:

EU# = Emission Unit Number

NO_x = Nitrogen Oxides

SO₂ = Sulfur Dioxide

TPM = Tons per calendar month

TPY = Tons per Year on a consecutive twelve (12) month rolling period. To calculate the amount of a consecutive 12 month rolling period take the current calendar month amount and add it to the previous 11 calendar months total amount.

B. Operating Limits

The Permittee shall not exceed the quantity of fuel limits noted in Table 3.

Table 3		
EMISSION UNIT	FUEL TYPE	FUEL OPERATING LIMITS
EU # 1, 2, 3, 4, 5, and 6	Natural Gas	300.0 MMscf per consecutive twelve (12) month rolling period ¹ . 100.0 MMscf per calendar month.
	# 2 Fuel Oil (0.3% Sulfur)	200,000 gallons per consecutive twelve (12) month rolling period. 50,000 gallons per calendar month.
	# 6 Fuel Oil (0.5% or 1.0% sulfur)	655,636 gallons per consecutive twelve (12) month rolling period. 200,000 gallons per calendar month.

Table 3 Key:

EU# = Emission Unit Number

MMscf =Millions of standard cubic feet

Note 1: To calculate the amount of a consecutive 12 month rolling period take the current calendar month amount and add it to the previous 11 calendar months total amount

IV. GENERAL CONDITIONS FOR RESTRICTED EMISSION STATUS APPROVAL

- A. OPERATION - No person shall operate this facility except in conformance with the requirements established in this Restricted Emission Status Approval.

- B. SUSPENSION, MODIFICATION, AMENDMENT OR REVOCATION – This Approval may be suspended, modified, amended or revoked by MassDEP if, at any time, MassDEP determines that the facility is violating any condition or part of this approval. This approval may be modified or amended when in the opinion of MassDEP a modification or amendment is necessary or appropriate to clarify the approval conditions or after consideration of a written request by the Permittee to amend the approval conditions. Any relaxation of an emission limit or a specific condition noted in this approval that would result in an increase in emission rates as established in this approval must be made in accordance with 310 CMR 7.02. Also see General Condition M.
- C. OTHER REGULATIONS - This approval does not negate the responsibility of the owner/operator to comply with this or any other applicable federal, state, or local regulations now or in the future. Nor does this approval imply compliance with any other applicable federal, state or local regulation now or in the future.
- D. EXISTING APPROVALS - All plan approvals under 310 CMR 7.02(4) or 310 CMR 7.02(5), or, citation prior to August 3, 2001, 310 CMR 7.02(2) or prior to the effective date of this RES Approval shall continue to meet the emission rates and approved conditions specified in the applicable plan approval(s) unless specifically altered by this RES Approval.
- E. VISIBLE EMISSIONS - The facility shall be operated in a manner to prevent the occurrence of visible emissions that cause or contribute to a condition of air pollution as defined in Regulation 310 CMR 7.01 and 7.06.
- F. DUST AND ODOR - The facility shall be operated in a manner to prevent the occurrence of dust or odor conditions that cause or contribute to a condition of air pollution as defined in Regulation 310 CMR 7.01 and 7.09.
- G. NOISE - The Permittee shall ensure that noise levels during routine operations, including start ups and shut downs, shall not exceed MassDEP Noise Policy 90-001 and in no case shall cause a condition of air pollution as defined in Regulation 310 CMR 7.01 and 7.10.
- H. ASBESTOS - Should asbestos remediation/removal be required as a result of this RES Approval, such asbestos remediation/removal shall be done in accordance with Regulation 310 CMR 7.15.
- I. MONITORING - Equipment or emission monitoring systems installed for the purpose of documenting compliance with this RES Approval shall be installed, calibrated, maintained and operated by the approval in sufficient manner to ensure continuous and accurate operations at all times.
- J. TESTING - Any emission testing to be compared to limitations in this RES Approval must be conducted in accordance with the Environmental Protection Agency test methods

as specified in the Code of Federal Regulations, Title 40, Part 60, Appendix A - Standards of Performance for New Stationary Sources or by another method correlated to the above method to the satisfaction of MassDEP and in accordance with the requirements noted in 310 CMR 7.13.

In accordance with 310 CMR 7.04(4)(a), each fuel utilization facility shall be inspected and maintained in accordance with the manufacturer's recommendations and tested for efficient operation at least once in each calendar year. The results of said inspection, maintenance and testing and the date upon which it was performed shall be recorded and posted conspicuously on or near the permitted equipment.

K. RECORD KEEPING - A record keeping system shall be established and continued on site by the Permittee. All records shall be maintained up-to-date such that twelve-month rolling period information is readily available for Department examination. Record keeping shall, at a minimum, include:

1. Compliance records sufficient to demonstrate that emissions have not exceeded what is allowed by this RES Approval. Such records may include daily production records, raw material usage rates, fuel purchase receipts, emissions test results, monitoring equipment data and reports.
2. Maintenance: A record of routine maintenance activities performed on emission unit control equipment and monitoring equipment including, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
3. Malfunctions: A record of all malfunctions on emission unit control and monitoring equipment including, at a minimum: the date and time the malfunction occurred; a description of the malfunction and the corrective action taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the emission unit returned to compliance.
4. All records shall be kept on site for five (5) years and shall be made available to MassDEP upon request.
5. Source Registration records, required pursuant to 310 CMR 7.12, shall be kept on-site for five (5) years and shall be made available to MassDEP upon request.
6. Pursuant to the authority granted to MassDEP at 310 CMR 7.02(7), the facility shall maintain a copy of this Approval, and any subsequent modification(s) of this Approval, on-site for as long as the Approval is valid.

L. REPORTING

1. The Permittee shall submit a Source Registration/Emission Statement Form to MassDEP on an annual or tri-annual basis as required by 310 CMR 7.12
2. The Central Regional Bureau of Waste Prevention, Compliance and Enforcement Section, must be notified by telephone, email, or fax as soon as possible after the occurrence of any upsets or malfunctions to the facility equipment or monitoring equipment which result in an excess emission to the air and/or a condition of air pollution.
3. The Permittee shall report emissions data on a ton per month and ton per year basis using the Annual Report Form, which can be located on the MassDEP website: <http://www.mass.gov/dep/air/approvals/aqforms.htm#report> . Annual Report Forms, containing emissions data for the previous calendar year, shall be submitted to this Regional office by March 15th of each year.

M. MODIFICATIONS – Modifications to this RES Approval that do not increase the facility-wide limits set forth in this approval must comply with the requirements of 310 CMR 7.02(10)(d) and (e). Any proposed increase in emissions above the limits contained in this RES Approval must first be approved in writing by MassDEP pursuant to 310 CMR 7.02(10)(b), (c) and (f). In addition, any increase may subject the facility to additional regulatory requirements.

N. REMOVAL OF AIR POLLUTION CONTROL EQUIPMENT - Notwithstanding 310 CMR 7.02(2)(b)2., no person shall cause, suffer, allow, or permit the removal, alteration or shall otherwise render inoperative any air pollution control equipment or equipment used to monitor emissions which has been installed as a requirement of 310 CMR 7.00, other than for reasonable maintenance periods or unexpected and unavoidable failure of the equipment, provided that MassDEP has been notified of such failure, or in accordance with specific written approval of MassDEP.

O. COMPLIANCE ASSURANCE FEE – Pursuant to 310 CMR 4.03, an annual fee, based on the Commonwealth's fiscal year, will be charged to your facility to cover the cost of compliance activities performed by MassDEP, including registrations, report reviews, inspections, source registration reviews, etc. No fee shall be charged in the fiscal year that the permit is issued. If multiple air quality permits exist for a facility, the facility shall pay the single highest applicable fee. This fee does not include stack test fees.

V. APPEAL RIGHTS

This Approval is an action of the MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why this Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts,
Department of Environmental Protection,
P. O. Box 4062,
Boston, MA 02211.

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency) county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The

MassDEP may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

APPENDIX A

Fitchburg State RES Emission Calculations

Units for which RES is being sought:					Emission Factors			Unrestricted Potential to Emit			
SR DEP #	Date Installed	Unit	Heat Input Capacity (MMBtu/hr)	Fuel	SO ₂	NO _x	Units	Annual Fuel Use	Units	SO ₂ (TPY)	NO _x (TPY)
1	1997	Boiler 1 - Dupont	25.1	Natural Gas	0.60	100.00	SR lb/MMScf	215.66	MMScf	0.00	10.78
				No. 6 Oil - 0.5% S	78.50	47.00	SR lb/1000 gal	1,467.30	1000 Gal	57.55	34.48
2	1977	Boiler 2 - Dupont	49.515	No. 6 Oil - 0.5% S	78.50	47.00	SR lb/1000 gal	2,891.68	1000 Gal	113.50	67.95
				No. 6 Oil - 1% S	157.00	47.00	SR lb/1000 gal	2,891.68	1000 Gal	227.00	67.95
3	1977	Boiler 3 - Dupont	49.515	No. 6 Oil - 0.5% S	78.50	47.00	SR lb/1000 gal	2,891.68	1000 Gal	113.50	67.95
				No. 6 Oil - 1% S	157.00	47.00	SR lb/1000 gal	2,891.68	1000 Gal	227.00	67.95
20	2008	Boiler 1 - McKay	4.923	Natural Gas	0.60	100.00	SR lb/MMScf	42.28	MMScf	0.01	2.11
				No. 2 Oil - 0.3%	42.60	24.00	SR lb/1000 gal	297.84	1000 Gal	8.34	3.57
21	2008	Boiler 2 - McKay	4.923	Natural Gas	0.60	100.00	SR lb/MMScf	42.28	MMScf	0.01	2.11
				No. 2 Oil - 0.3%	42.60	24.00	SR lb/1000 gal	297.84	1000 Gal	8.34	3.57
22	2008	Boiler 3 - McKay	4.923	Natural Gas	0.60	100.00	SR lb/MMScf	42.28	MMScf	0.01	2.11
				No. 2 Oil - 0.3%	42.60	24.00	SR lb/1000 gal	297.84	1000 Gal	8.34	3.57

* Natural Gas assumed to have a heating value of 1020 Btu/scf

* No. 6 fuel oil assumed to have a heating value of 150,000 Btu/gal

* No. 2 fuel oil assumed to have a heating value of 140,000 Btu/gal

* All units assumed to operate 8760 hours per year for potential emission calculations

* SR DEP# is the number used to identify this unit on latest source registration. No number indicates that the unit has not been included.

* Emission factors labeled "SR" have been obtained from the latest Source Registration and are the appropriate factors for the NAICS code for that unit.

Annual Potential No. 6 Fuel Oil Use from Boilers 1, 2 and 3:	7,250.65	1000 Gal
Worst Case Potential Emissions from Boilers 1, 2 and 3:	SO ₂ TPY	NO _x TPY
	511.88	170.39
Annual Potential No. 2 Fuel Oil Use from Boiler 20, 21 and 22:	893.52	1000 Gal
Worst Case Potential Emissions from Boilers 20, 21, 22:	SO ₂ TPY	NO _x TPY
	19.03	10.72
Worst Case Potential Unrestricted Emissions from Boilers 1, 2, 3, 20, 21, 22:	SO ₂ TPY	NO _x TPY
	530.62	181.11
Potential Emissions w/ Fuel Caps from Boilers 1, 2, 3, 20, 21, 22	SO ₂ TPY	NO _x TPY
750,000 Gal No. 6, 1 or 0.5% S	68.88	17.63
200,000 Gal No. 2, 0.3% S	4.26	2.40
309 MMScf Gas	0.09	15.00
Restricted Potential Emissions with Restrictions from Boilers 1, 2, 3, 20, 21, 22:	63.23	35.03

Additional Emission Units						Emission Factors			Unrestricted Potential to Emit			
SR DEP #	Date Installed	Unit	Heat Input Capacity (MMBtu/hr)	kW Rating	Fuel	SO ₂	NO _x	Units	Annual Fuel Use	Units	SO ₂ (TPY)	NO _x (TPY)
11	1975	Generator - Hammond	2.16	200	No. 2 Oil 0.3%	39.70	604.00	SR lb/1000 gal	4.62	1000 Gal	0.09	1.40
12	1977	Generator - Dupont	2.67	250	No. 2 Oil 0.3%	39.70	604.00	SR lb/1000 gal	5.73	1000 Gal	0.11	1.73
13	1961	Generator - Condit	0.77	55	Natural Gas	0.60	2,840.00	SR lb/MMScf	0.23	MMScf	0.00	0.32
14	1973	Generator - Conlon IA 1	1.99	140	Natural Gas	0.60	2,840.00	SR lb/MMScf	0.69	MMScf	0.00	0.83
15	1970	Generator - McKay	1.99	140	Natural Gas	0.60	2,840.00	SR lb/MMScf	0.59	MMScf	0.00	0.83
16	1966	Generator - Aubuchon	1.29	100	Natural Gas	0.60	2,840.00	SR lb/MMScf	0.38	MMScf	0.00	0.64
16	1977	Generator - Russel 1	1.29	100	Natural Gas	0.60	2,840.00	SR lb/MMScf	0.38	MMScf	0.00	0.64
17	1991	Fire Pump - Aubuchon	1.01	130 HP	No. 2 Oil 0.3%	39.70	604.00	SR lb/1000 gal	2.16	1000 Gal	0.04	0.65
17	1991	Fire Pump - Russel	1.01	130 HP	No. 2 Oil 0.3%	39.70	604.00	SR lb/1000 gal	2.16	1000 Gal	0.04	0.65
23	2008	Generator - Conlon II	1.148	100	ULSD	39.70	7.32	ERP lb/1000 gal	2.46	1000 Gal	0.05	0.01
23	2009	Generator - Campus Police	1.148	100	ULSD	39.70	7.32	ERP lb/1000 gal	2.46	1000 Gal	0.05	0.01
	2004	Generator - Russell II	2.159	200	No. 2 Oil 0.3%	39.70	604.00	SR lb/1000 gal	4.62	1000 Gal	0.09	1.40
	2009	Generator - Mara	1.638	155	ULSD	39.70	7.32	ERP lb/1000 gal	3.51	1000 Gal	0.07	0.01
18,19,24,25	Various	Sm Boilers and Heaters	10	NA	Natural Gas	0.60	100.00	SR lb/MMScf	85.88	MMScf	0.03	4.29

* No. 2 fuel oil assumed to have a heating value of 140,000 Btu/gal

* Natural Gas assumed to have a heating value of 1020 Btu/scf

* All generator and fire pump units assumed to operate 300 hours per year for potential emission calculations

* All boilers assumed to operate 8760 hours per year for potential emission calculations

* Fuel consumption obtained from manufacturer's spec sheets or similar unit spec sheet

* Emission factors labeled "SR" have been obtained from the latest Source Registration and are the appropriate factors for the NAICS code for that unit.

* Emission factors labeled "ERP" are based on limits required by the Mass Environmental Results Program

Total Potential Emissions from Additional Units	SO ₂ (TPY)	NO _x (TPY)
	0.58	13.21
Facility-Wide Unrestricted Potential Emissions:	SO ₂ (TPY)	NO _x (TPY)
	531.19	194.32
Facility-Wide Restricted Potential Emissions:	SO ₂ (TPY)	NO _x (TPY)
	63.80	48.24